

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in the present application.

1. – 75. (Cancelled)

76. (Currently Amended) ~~The computer-readable recording medium according to claim 72A~~
computer-readable recording medium having recorded therein an information processing program, the program when executed by a processor performs:

a step of causing a computer to function as a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

a step of causing the computer to function as a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display, further displaying on the screen of the display a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance

between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, the information processing program further comprising:

a step of causing the computer to function as an operation signal management processor for managing an operation signal output from an operational input device, the operation signal corresponding to an operational input made by a user;

a step of causing the computer to function as a determination processor for determining whether timing that the moving object moving on the screen overlaps with the mark object is coincident with timing that the operation signal is output from the operational input device to the operation signal management processor in response to an operation to the operational input device made by a user; and

a step of causing the computer to function as a determination mark object display processor for displaying a determination mark object corresponding to a determination result of the determination processor as to whether a coincidence of the timing is obtained, on the mark object associated with the determination result, wherein

the musical piece management ~~means~~ processor manages strength information corresponding to the level of playing volume that is preset for a reproduced musical piece, and

the information processing program further comprises:

a step of causing the computer to function as an operation signal management ~~means~~ processor for managing an operation signal output from a strength input ~~means~~ device, the operation signal corresponding to strength of an operational input made by a user;

a step of causing the computer to function as a determination ~~means~~ processor for determining whether timing that the moving object moving on the screen overlaps with a mark object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the strength input ~~means~~ processor to the operation signal management ~~means~~ processor when a user operates the strength input ~~means~~ device, and further determining whether strength information of the operational input that is sensed by the operation signal management ~~means~~ processor from the operation signal matches the strength information corresponding to the level of playing volume that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management ~~means~~ processor, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a step of causing the computer to function as a notification ~~means~~ processor for generating notification information corresponding to a determination result of the determination ~~means~~ processor as to whether the two pieces of the strength information match each other when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management ~~means~~ processor, displaying the generated notification information on the screen of the display ~~means~~, and outputting sound of the generated notification information from a sound output ~~means~~ device.

77. (Currently Amended) The computer-readable recording medium according to claim 76, the information processing program further comprising:

a step of causing the computer to function as parameter control ~~[[means]]~~ processor for controlling modification of at least one of a parameter for setting the size of the mark object displayed on the screen by the mark/moving object display ~~processing means~~ processor and a parameter for setting a display color or brightness of the mark object displayed on the screen by the mark/moving object display ~~processing means~~ processor, depending on the level of playing volume that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management ~~[[means]]~~ processor; and

a step of causing the computer to function as a mode switching ~~[[means]]~~ processor for switching, according to a preset mode, between a mode in which the parameter control ~~[[means]]~~ processor modifies the parameters and a mode in which the parameter control ~~[[means]]~~ processor does not modify the parameters.

78. (Currently Amended) ~~The computer-readable recording medium according to claim 72A~~
computer-readable recording medium having recorded therein an information processing
program, the program when executed by a processor performs:

a step of causing a computer to function as a musical piece management processor for
reading information for generating musical tones and information as to at least a rhythm and a
tempo that are set in relation to the information for generating musical tones, from a recording
medium having recorded therein the information for generating musical tones and the
information as to the at least a rhythm and tempo, and reproducing a musical piece while
managing at least the rhythm and tempo; and

a step of causing the computer to function as a mark/moving object display processor for,
when the musical piece management processor reproduces the musical piece, arranging and

displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display, further displaying on the screen of the display a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, the information processing program further comprising:

_____ a step of causing the computer to function as an operation signal management processor for managing an operation signal output from an operational input device, the operation signal corresponding to an operational input made by a user;

_____ a step of causing the computer to function as a determination processor for determining whether timing that the moving object moving on the screen overlaps with the mark object is coincident with timing that the operation signal is output from the operational input device to the operation signal management processor in response to an operation to the operational input device made by a user; and

_____ a step of causing the computer to function as a determination mark object display processor for displaying a determination mark object corresponding to a determination result of the determination processor as to whether a coincidence of the timing is obtained, on the mark object associated with the determination result, wherein

the musical piece management [[means]] processor manages direction information indicating a direction of playing instructions that is preset for a reproduced musical piece, and

the information processing program further comprises:

a step of causing the computer to function as a operation signal management [[means]] processor for managing an operation signal output from a operation direction input [[means]] device, the operation signal corresponding to a direction of an operational input made by a user;

a step of causing the computer to function as a determination [[means]] processor for determining whether timing that the moving object moving on the screen overlaps with a mark object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the operation direction input [[means]] device to the operation signal management [[means]] processor when a user operates the operation direction input [[means]] device, and further determining whether direction information of the operational input sensed by the operation signal management [[means]] processor from the operation signal matches the direction information of playing instructions that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management [[means]] processor, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a step of causing the computer to function as a notification [[means]] processor for generating notification information corresponding to a determination result of the determination [[means]] processor as to whether the two pieces of the direction information match each other when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management [[means]] processor, displaying the generated notification information on the screen of the display

[[means]]device, and outputting sound of the generated notification information from a sound output [[means]] device.

79. (Currently Amended) The computer-readable recording medium according to claim 78, the information processing program further comprising:

a step of causing the computer to function as a symbol display ~~processing means~~ processor for displaying a predetermined symbol indicating a predetermined directional instruction button provided on the operation direction input [[means]] device on the mark object corresponding to the predetermined beat; and

a step of causing the computer to function as mode switching [[means]] processor for switching, according to a preset mode, between a mode in which the symbol display ~~processing means~~ processor displays the predetermined symbol on the mark object corresponding to the predetermined beat and a mode in which the symbol display ~~processing means~~ processor does not display the predetermined symbol on the mark object corresponding to the predetermined beat.

80. (Currently Amended) ~~The computer-readable recording medium according to claim 71~~A computer-readable recording medium having recorded therein an information processing program, the program when executed by a processor performs:

a step of causing a computer to function as a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the

information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

a step of causing the computer to function as a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display, further displaying on the screen of the display a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, wherein

the musical piece management [[means]] processor manages time length information as to the length of time of continuance of playing sound or silent state that are preset for a reproduced musical sound, and

the information processing program further comprises:

a step of causing the computer to function as an operation signal management [[means]] processor for managing an operation signal output from a pause input [[means]] device, the operation signal corresponding to an operational input of a pause instruction made by a user;

a step of causing the computer to function as a determination [[means]] processor for determining whether timing that the moving object moving on the screen overlaps with a mark

object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the pause input [[means]] device to the operation signal management [[means]] processor when a user starts to operate the pause input [[means]] device, and further determining whether an operation for prolonging sound or silent state is successfully made according to whether the operational input continues a predetermined period of time, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a step of causing the computer to function as a notification [[means]] processor for generating notification information corresponding to a determination result of the determination [[means]] processor as to whether the time length information matches when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management [[means]] processor, displaying the generated notification information on the screen of the display [[means]] device, and outputting sound of the generated notification information from a sound output [[means]] device.

81. (Currently Amended) ~~The computer-readable recording medium according to claim 71A~~
computer-readable recording medium having recorded therein an information processing program, the program when executed by a processor performs:

a step of causing a computer to function as a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the

information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

a step of causing the computer to function as a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display, further displaying on the screen of the display a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, the information processing program further comprising:

a step of causing the computer to function as a symbol display ~~processing means~~ processor for displaying a predetermined symbol indicating a predetermined button that is operable as the pause input ~~[[means]]device~~, on the mark object corresponding to the predetermined beat; and

a step of causing the computer to function as a mode switching ~~[[means]] device~~ for switching, according to a preset mode, between a mode in which the symbol display ~~processing means~~ processor displays the predetermined symbol on the mark object corresponding to the predetermined beat and a mode in which the symbol display ~~processing means~~ processor does

not display the predetermined symbol on the mark object corresponding to the predetermined beat.

82. (Currently Amended) ~~The computer-readable recording medium according to claim 71A~~
computer-readable recording medium having recorded therein an information processing
program, the program when executed by a processor performs:

a step of causing a computer to function as a musical piece management processor for
reading information for generating musical tones and information as to at least a rhythm and a
tempo that are set in relation to the information for generating musical tones, from a recording
medium having recorded therein the information for generating musical tones and the
information as to the at least a rhythm and tempo, and reproducing a musical piece while
managing at least the rhythm and tempo; and

a step of causing the computer to function as a mark/moving object display processor for,
when the musical piece management processor reproduces the musical piece, arranging and
displaying the same number of mark objects as beats corresponding to the information as to the
rhythm of the musical piece reproduced and managed by the musical piece management
processor, the mark objects each having a shape corresponding to the number of the beats and
being related to a sequence of the beats, on a screen of a display, further displaying on the screen
of the display a moving object so that the moving object travels between the mark objects on the
screen periodically at a constant speed according to the sequence of the beats, and also
controlling the display of the moving object and the mark objects by setting a special distance
between the mark objects so that a cycle that the moving object travels over all the mark objects
at the constant speed matches a measure of the tempo of the musical piece reproduced and

managed by the musical piece management processor, wherein, when the musical piece management ~~[[means]]~~ processor reproduces a musical piece so that a rhythm thereof is changed in the middle of the musical piece, the mark/moving object display ~~processing means~~ processor arranges and displays the same number of mark object as the number of beats of the changed musical piece on the screen of the display ~~[[means]]~~ device, in a measure immediately before timing that the rhythm of the musical piece is changed, so that the mark objects each have a shape corresponding to the number of beats of the changed musical piece and are displayed in relation to a sequence of the beats.

83. – 87. (Cancelled)

88. (Currently Amended) ~~The information processing apparatus according to claim 83~~An information processing apparatus comprising:

_____ a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

_____ a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the

beats, on a screen of a display device, further displaying on the screen of the display device a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, wherein

the musical piece management [[means]] processor manages strength information corresponding to the level of playing volume that is preset for a reproduced musical piece, and

the apparatus further comprises:

an operation signal management [[means]] processor for managing an operation signal output from a strength input [[means]] device, the operation signal corresponding to strength of an operational input made by a user;

a determination [[means]] processor for determining whether timing that the moving object moving on the screen overlaps with a mark object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the strength input [[means]] device to the operation signal management [[means]] processor when a user operates the strength input [[means]] device, and further determining whether strength information of the operational input that is sensed by the operation signal management [[means]] processor from the operation signal matches the strength information corresponding to the level of playing volume that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management [[means]] processor, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a notification ~~[[means]]~~ processor for generating notification information corresponding to a determination result of the determination ~~[[means]]~~ processor as to whether the two pieces of the strength information match each other when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management ~~[[means]]~~ processor, displaying the generated notification information on the screen of the display ~~[[means]]~~ device, and outputting sound of the generated notification information from a sound output ~~[[means]]~~ device.

89. (Currently Amended) The information processing apparatus according to claim 88, further comprising:

a parameter control ~~[[means]]~~ processor for controlling modification of at least one of a parameter for setting the size of the mark object displayed on the screen by the mark/moving object display ~~processing means~~ processor and a parameter for setting a display color or brightness of the mark object displayed on the screen by the mark/moving object display ~~processing means~~ processor, depending on the level of playing volume that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management ~~[[means]]~~ processor; and

a mode switching ~~[[means]]~~ processor for switching, according to a preset mode, between a mode in which the parameter control ~~[[means]]~~ processor modifies the parameters and a mode in which the parameter control ~~[[means]]~~ processor does not modify the parameters.

90. (Currently Amended) ~~The information processing apparatus according to claim 83~~An information processing apparatus comprising:

_____ a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

_____ a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display device, further displaying on the screen of the display device a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, wherein

the musical piece management [[means]] processor manages direction information indicating a direction of playing instructions that is preset for a reproduced musical piece, and

the apparatus further comprises:

an operation signal management [[means]] processor for managing an operation signal output from an operation direction input [[means]] device, the operation signal corresponding to a direction of an operational input made by a user;

a determination ~~[[means]]~~ processor for determining whether timing that the moving object moving on the screen overlaps with a mark object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the operation direction input ~~[[means]]~~ device to the operation signal management ~~[[means]]~~ processor when a user operates the operation direction input ~~[[means]]~~ device, and further determining whether direction information of the operational input sensed by the operation signal management ~~[[means]]~~ processor from the operation signal matches the direction information of playing instructions that is preset for the predetermined beat of the musical piece reproduced and managed by the musical piece management ~~[[means]]~~ processor, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a notification ~~[[means]]~~ processor for generating notification information corresponding to a determination result of the determination ~~[[means]]~~ processor as to whether the two pieces of the direction information match each other when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management ~~[[means]]~~ processor, displaying the generated notification information on the screen of the display ~~[[means]]~~ device, and outputting sound of the generated notification information from a sound output ~~[[means]]~~ device.

91. (Currently Amended) The information processing apparatus according to claim 90, further comprising:

a symbol display ~~processing means~~ processor for displaying a predetermined symbol indicating a predetermined directional instruction button provided on the operation direction input ~~[[means]]~~ device on the mark object corresponding to the predetermined beat; and

a mode switching ~~[[means]]~~ processor for switching, according to a preset mode, between a mode in which the symbol display ~~processing means~~ processor displays the predetermined symbol on the mark object corresponding to the predetermined beat and a mode in which the symbol display ~~processing means~~ processor does not display the predetermined symbol on the mark object corresponding to the predetermined beat.

92. (Currently Amended) ~~The information processing apparatus according to claim 83~~An information processing apparatus comprising:

_____ a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

_____ a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display device, further displaying on the screen of the display device a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant

speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, wherein

the musical piece management [[means]] processor manages time length information as to the length of time during which playing sound or silent state that is preset for a reproduced musical piece continues, and

the apparatus further comprises:

an operation signal management [[means]] processor for managing an operation signal output from a pause input [[means]] device, the operation signal corresponding to an operational input of a pause instruction made by a user;

a determination [[means]] processor for determining whether timing that the moving object moving on the screen overlaps with a mark object corresponding to a predetermined beat is coincident with timing that the operation signal is output from the pause input [[means]] device to the operation signal management [[means]] processor when a user starts to operate the pause input [[means]] device, and further determining whether an operation for prolonging sound or silent state is successfully made according to whether the operational input continues a predetermined period of time, when the moving object moving on the screen overlaps with the mark object corresponding to the predetermined beat; and

a notification [[means]] processor for generating notification information corresponding to a determination result of the determination [[means]] processor as to whether the time length information matches when a coincidence of the timing is obtained, for one measure containing the predetermined beat of the musical piece that is reproduced and managed by the musical piece management [[means]] processor, displaying the generated notification information on the screen

of the display ~~[[means]]~~ device, and outputting sound of the generated notification information from a sound output ~~[[means]]~~ device.

93. (Currently Amended) The information processing apparatus according to claim 92, further comprising:

a symbol display ~~processing means~~ processor for displaying a predetermined symbol indicating a predetermined button that is operable as the pause input ~~[[means]]~~ device, on the mark object corresponding to the predetermined beat; and

a mode switching ~~[[means]]~~ processor for switching, according to a preset mode, between a mode in which the symbol display ~~processing means~~ processor displays the predetermined symbol on the mark object corresponding to the predetermined beat and a mode in which the symbol display ~~processing means~~ processor does not display the predetermined symbol on the mark object corresponding to the predetermined beat.

94. (Currently Amended) ~~The information processing apparatus according to claim 83~~An information processing apparatus comprising:

a musical piece management processor for reading information for generating musical tones and information as to at least a rhythm and a tempo that are set in relation to the information for generating musical tones, from a recording medium having recorded therein the information for generating musical tones and the information as to the at least a rhythm and tempo, and reproducing a musical piece while managing at least the rhythm and tempo; and

a mark/moving object display processor for, when the musical piece management processor reproduces the musical piece, arranging and displaying the same number of mark

objects as beats corresponding to the information as to the rhythm of the musical piece reproduced and managed by the musical piece management processor, the mark objects each having a shape corresponding to the number of the beats and being related to a sequence of the beats, on a screen of a display device, further displaying on the screen of the display device a moving object so that the moving object travels between the mark objects on the screen periodically at a constant speed according to the sequence of the beats, and also controlling the display of the moving object and the mark objects by setting a special distance between the mark objects so that a cycle that the moving object travels over all the mark objects at the constant speed matches a measure of the tempo of the musical piece reproduced and managed by the musical piece management processor, wherein, when the musical piece management [[means]] processor reproduces a musical piece so that a rhythm thereof is changed in the middle of the musical piece, the mark/moving object display ~~processing means~~ processor arranges and displays the same number of mark object as the number of beats of the changed musical piece on the screen of the display [[means]] device, in a measure immediately before timing that the rhythm of the musical piece is changed, so that the mark objects each have a shape corresponding to the number of beats of the changed musical piece and are displayed in relation to a sequence of the beats.

95. - 96 (Cancelled)